

ATEX Zone 21 Motor Installation, Operation, Maintenance Manual Supplement to Form 5359-R6

⚠ WARNING

- Warning indicates a hazardous situation which, if not avoided, could result in death or serious injury.

1.0 INTRODUCTION

This ATEX® Zone 21 Motor Installation, Operation and Maintenance Manual Supplement to Form 5359-R6 is to be utilized in conjunction with the Standard Induction Motor Installation, Operation and Maintenance Manual (5359-R6). These manuals are supplied together with the motor.

1.1 DECLARATION OF CONFORMITY

All motors with the Ex mark on the nameplate are certified by UL* LLC (Certificate IECEx® UL 20.0045X) as well as certified by UL International DEMKO (Certificate DEMKO 20 ATEX 2371X) and comply with the ATEX® Directive 2014/34/EU and the following Zone 21 standards:

- BS EN IEC® 60079-0:2018** Explosive atmospheres - Part 0: Equipment-General Requirements;
- BS EN 60079-31:2014** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
- IEC 60079-31:2022** Explosive Atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
- IEC 60079-0:2017** Explosive Atmospheres - Part 0: Equipment - General Requirements

Also, all motors with the CCC mark on the nameplate are certified by Nanyang Explosion Protected Electrical Apparatus Research Institute Co., Ltd., (Certificate No. 2021312301003070) and comply with the following standards:

- GB/T 3836.1-2021** Explosive atmospheres - Part 1: Equipment-General Requirements;
- GB/T 3836.31-2021** Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"

WARNING! Do not open when hazardous atmosphere is present.

警告！存在爆炸性环境时严禁打开。

WARNING! Motor electrical power input connections shall be made only by qualified electrical service personnel.

警告！电机电源输入连接只能由合格的电气服务人员进行。

2.0 NAMEPLATE


Nameplate marking (Table 1) to comply with ATEX Zone 21, per 2014/34/EU, according to standards listed above.

Nameplate temperature codes are listed per Table 2.

The motor must be selected such that the marked rating is compatible with all aspects of the application.

Motor electrical input ratings, mechanical output ratings and maximum surface temperatures are defined on the nameplate.

Table 1: Nameplate Markings

Line 1	Marking	DEMKO	20	ATEX	DEMKO 20 ATEX 2371X		
	Description	European Notified Body (UL International DEMKO)	Year of Certificate Issuance	Directive	Certificate Number		
Line 2	Marking	CE	0539		II	2	D
	Description	CE® Mark	ENB Number	ATEX Directive mark	Equipment Group	Equipment Category	Type of Atmosphere
	Values	-	-	-	Non-mining	2 = Zone 21	D = dust
Line 3	Marking	Ex CCC	tb	IIIC	T130°C	Db	
	Description	Ex - ATEX Indicator CCC – China Compulsory Certification	type of protection	Dust group	Temperature code	Equipment protection level	
	Possible Values	European compliance	tb = dust ignition protection by enclosure	IIIC = Conductive dust	see table below	Db	

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3.0 LOCATION

3.1 AMBIENT TEMPERATURE RANGE

Standard motor ambient temperature range is -20°C to 40°C.

Table 2: Temperature Code Markings

NEMA®* frame	Service Factor	Power supply	Frequency	Temp code
326	1.00	Sine Wave	60 or 50 Hz	T130°C
326	1.00	PWM	20-60 Hz (PWM Type VFD; Constant or Variable Torque Load)	T130°C

4.0 ELECTRICAL CONNECTIONS

4.1 VARIABLE FREQUENCY DRIVE

1. When operated on Variable Frequency Drive (also called a VFD, inverter, Adjustable Speed Drive (ASD), adjustable frequency control), a Pulse-Width Modulation (PWM) type drive is required.
2. Only motors marked with PWM type VFD capability are approved for use on a VFD.
3. It is the start-up personnel's responsibility to properly tune the VFD to the motor for the specific application.
4. An effective common mode filter is required at the VFD output to protect the motor bearings from shaft currents caused by VFD sourced common mode voltages.

4.2 MAIN TERMINAL (CONDUIT) BOX

Cable gland(s) - provided by installer - must be ATEX®* certified and assembled per cable gland manufacturer's instructions. Cable glands must be of an IP rating equal to or higher than IP rating marked on the motor nameplate. These motors utilize a 1-1/2 inch NPT threaded conduit opening.

The accessories used for cable entry shall be separately CCC certified according to the applicable type of protection and shall guarantee the minimum degree of protection as indicated on motor nameplate.

使用已取得CCC认证的且与使用环境相适应的Ex电缆引入装置，并应保证达到电机铭牌上所示的最低防护等级。

4.3 ELECTRICAL SUPPLY CONDUCTORS

All conductors brought into the main terminal (conduit) box must have a temperature rating of at least 105°C. The incoming electrical supply shall consist of a flexible cable with the number and size of individual conductors appropriate for the installation. The cable assembly shall include an earthing conductor for connection to the earthing terminal as described in 4.4.

4.4 EARTHING CONNECTIONS - INTERNAL

WARNING! Earth connections must be carried out according to local regulations by qualified electrical service personnel.

A stainless steel or brass terminal is provided in the motor's terminal box to provide earthing connection.

警告！接地连接必须由合格的电气服务人员按照当地法规进行。

电机接线盒中有一个不锈钢或黄铜端子，用于接地连接。

4.5 THERMOSTATS

Thermostats are an optional feature not required for ATEX Zone 21 operation.

5.0 MAINTENANCE

5.1 FASTENERS

These motors utilize English unit fasteners (hardware), unless otherwise specified.

5.2 TOOLING

Fasteners must be secured using the appropriate tool. Sockets or enclosed wrenches must be used on all hex fasteners, the rotor requires a tool which balances the rotor during assembly/ disassembly to prevent damage to the winding.

NOTE: Contact importer or manufacturer for translation of these instructions for languages other than English.

5.3 BEARING LUBRICATION

Motor bearings are greased at the factory and therefore do not need re-greasing at time of installation. Re-grease motor bearings with the specific grease identified on motor nameplate. Do not use any other type of grease.

Re-greasing interval:

- Every 600 hours of operation
- If motor has been idle for more than six months

5.4 SURFACE CLEANING

The schedule for surface cleaning is based on site conditions. Clean the surface of the motor as needed with a damp cloth to minimize the risk of electrostatic discharge.

根据需要用湿布清洁电机表面，以尽量减少静电放电的风险。

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